REMARKS

This reply is <u>fully responsive</u> to the Office Action dated March 08, 2006, and is filed within the three (3) months following the mailing date of the Office Action. If necessary, the Commissioner is authorized to treat this response as including a petition to

5   extend the time period pursuant to 37 CFR 1.136(a), requesting an extension of time of the number of months necessary to make this response timely filed.

Disclosure/Claims Status Summary:

The Examiner stated that the Office Action is in response to U.S. Patent

10   Application No. 10/695,529, filed October 27, 2003. Pending Claims 1-66 were rejected.

Claim Rejection Summary:

Claims 1-66 are pending in the application.

A.   Claims 1-66 were rejected under 35 U.S.C. § 101; and

15   B.   Claims 1-66 were rejected under 35 U.S.C. § 112, first paragraph.

A. Rejection of Claims 1-66 under 35 U.S.C. § 101:

The Examiner rejected Claims 1-66 as being directed to non-statutory subject matter.

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As to Claims 1-66

The Examiner stated the invention as disclosed in Claims 1-66 is directed to non-statutory subject matter. The Examiner stated that none of the claims are limited to practical applications in the technological arts. The Examiner cited *In re Warmerdam*, 33

25   F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), as controlling the 35 U.S.C. §101 issues on that point for reasons made clear by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir. 1999). Specifically, the Examiner stated that the Federal Circuit held that the act of:

> "...[T]aking several abstract ideas and manipulating them together adds nothing to the basic equation. *AT&T v.* Excel at 1453 quoting *In re Wammerdam, 33* F.3d 1354, 1360 (Fed. Cir. 1994)."

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The Examiner concluded that the "decision flowchart" references are such abstract ideas. The Examiner continued by stating that he based his position upon guidance provided by the Federal Circuit in *In re Warmerdam*, as interpreted by *AT&T v. Excel*. The Examiner also stated that this set of precedents is within the same line of

10 cases as the *Alappat-State Street Bank* decisions and is in complete agreement with those decisions. The Examiner concluded that *In re Warmerdam* is consistent with the *State Street Bank* decision, holding that:

> "Today we hold that the transformation of data,
15 > representing <u>discrete dollar</u> amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces 'a useful, concrete and tangible result' -- a final sham price
20 > momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades. (emphasis added). *State Street Bank* at 1601."

25   The Examiner further stated that the case later eliminated the "business method exception" in order to show that business methods were not per se nonstatutory, but that the court clearly did not go so far as to make business methods per se statutory. The Examiner also stated that a reading of the excerpt above shows that the Court was very specific in its definition of the new practical application, as it defined the practical

30 application in the case as "...the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price..." The Examiner concluded by stating that the "The court was being very specific."

The Examiner remarked that the court was also careful to specify that the "useful, concrete and tangible result" it found was "a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." (i.e. the Examiner stated that the trading activity is the further

5   practical use of the real-world result). The Examiner also stated that the Applicant does not specify the associated practical application with the kind of specificity that the Federal Circuit used.

Furthermore, the Examiner stated that in the case of *In re Warmerdam*, the

10   Federal Circuit held that:

> "...The dispositive issue for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond simply manipulating 'abstract ideas' or 'natural phenomena' ... As the Supreme Court has made clear, '[a]n idea of itself is not patentable, ... taking
15 >   several abstract ideas and manipulating them together adds nothing to the basic equation..'" *In re Warmerdam*, 31 USPQ2d at 1759.

From this citation, the Examiner concluded that since the Federal Circuit held in *In re Warmerdam* that this is the "dispositive issue" when it judged the usefulness,

20   concreteness, and tangibility of the claim limitations in that case, the Examiner in the present case views this holding as the dispositive issue for determining whether a claim is "useful, concrete, and tangible" in similar cases. Accordingly, the Examiner found that the Applicant manipulated a set of abstract "decision flowcharts" to solve purely algorithmic problems in the abstract.

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With respect to the claims, the Examiner stated that since the claims are not limited to exclude such abstractions, the broadest reasonable interpretation of the claim limitations includes such abstractions. Therefore, the Examiner concluded that the claims are impermissibly abstract under the 35 U.S.C. §101 doctrine.

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Further, the Examiner stated that since *In re Warmerdam* is within the *State Street Bank* line of cases, it takes the same view of "useful, concrete, and tangible" that the Federal Circuit applied in *State Street Bank*. Therefore, the Examiner concluded that under *State Street Bank,* the present invention does not provide a "useful, concrete and

5   tangible result," and that the present invention only manipulates abstract ideas.

The Examiner also stated that the Federal Circuit validated the use of *In re Warmerdam* in its more recent *AT&T Corp.* v. *Excel Communications, Inc.* decision. The Examiner stated that the Court further stated that:

10   "Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d
     1754 (Fed. Cir. 1994) is not to the contrary. *** The court found that the
     claimed process did nothing more than manipulate basic mathematical
     constructs and concluded that 'taking several abstract ideas and
     manipulating them together adds nothing to the basic equation'; hence, the
15   court held that the claims were properly rejected under §101 ... Whether
     one agrees with the court's conclusion on the facts, the holding of the case
     is a straightforward application of the basic principle that mere laws of
     nature, natural phenomena, and abstract ideas are not within the categories
     of inventions or discoveries that may be patented under §101." *AT&T*
20   *Corp.* v. *Excel Communications, Inc.*, 50 USPQ2d 1447, 1453 (Fed. Cir.
     1999).

The Examiner also stated that the Court in *In re Warmerdam* stated that this was the dispositive issue to be considered. The Examiner further stated that in the *AT&T*

25   decision cited above, the Court reaffirmed that this is the issue for assessing the "useful, concrete, and tangible" nature of a set of claims under the 101 doctrine. Accordingly, the Examiner viewed the *In re Warmerdam* holding as the dispositive issue in this case.

Thus, the Examiner concluded that the present invention is merely the

30   manipulation of abstract ideas. The Examiner further concluded that the data referred to by Applicant's phrase "decision flowchart" is simply an abstract construct that does not provide limitations in the claims to the transformation of real-world data (such as monetary data or heart rhythm data) by some disclosed process. Therefore, the Examiner

concluded that the claims take several abstract ideas (i.e., "decision flowcharts" in the abstract) and manipulate them together, adding nothing to the basic equation. Based on that, the Examiner rejected Claims 1-66 under 35 U.S.C. §101.

5   The Applicant respectfully submits that the Examiner misinterpreted the cited cases and that Claims 1-66 comply with the requirements of 35 U.S.C. §101. More specifically, the Applicant submits that the present invention does not merely manipulate abstract ideas and does, in fact, provide a useful, concrete and tangible result. As clearly stated in the Specification, "[t]he immediate benefits include flexibility of use in
10   diagnosis, easy updating by learning, and the ability to cover cost of observations and multiple faults. This tool has application in any field where decisions are applied, non-limiting examples of which include diagnosing problems with machinery, such as cars, trucks, planes, boats, and trains, as well as with other problem types, such as computer network communications, satellite diagnostics, etc." See Paragraph 58, lines 5-11. In
15   particular, diagnostic services are desirable for many systems. The present invention allows a user to generate probabilistic graphs and determine the conditional probabilities for all test states. In other words, and as described in the specification, a user can assess the probability that a particular observation will occur (e.g., the failure for a given node such as a component) given certain pieces of existing evidence (e.g., such as the
20   condition of another component). One skilled in the art cannot dispute that the ability to determine the probability of a particular observation (e.g., failure) is a useful, concrete, and tangible result.

        In fact, using the reasoning stated in the *State Street Bank* decision, those skilled
25   in the art rely upon the conditional probabilities in order to make decisions, such as to repair, replace, abort, and/or continue use of components of a system. The ability to predict an observation and diagnose a system, until now, has been done using simple flow charts. The present invention improves upon the prior art by converting decision flow charts into decision probabilistic graphs that enable a user to create powerful graphical

probabilistic models in order to produce better decision procedures. The present invention is not merely a manipulation of an abstract idea but, for example, a method for determining probabilities of predicted observations, clearly a useful, concrete, and tangible result.

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Because the present invention complies with the requirements of 35 U.S.C. §101, the Applicant respectfully requests that this rejection be withdrawn.

B. Claims 1-66 rejected under 35 U.S.C. § 112:

10   The Examiner rejected Claims 1-66 under 35 U.S.C. §112, first paragraph, stating that current case law requires such a rejection if a §101 rejection is given. The Examiner supported the rejection by stating that because Applicant has not disclosed the practical application for the invention, as a matter of law there is no way the Applicant could have disclosed how to practice the undisclosed practical application. Therefore, the Examiner

15   rejected Claims 1-66 on this basis. Additionally, for other reasons set below, the Examiner further rejected Claims 1-66 under 35 U.S.C. §112.

For the reasons stated above with respect to the §101 rejection, the Applicant respectfully disagrees with the Examiner's reasoning. The Applicant submits that the

20   §101 rejection is inappropriate. Therefore, any rejection based on a rejection under §101 is also inappropriate.

The Examiner further stated that independent Claims 1, 23, and 45 were not fully enabled to operate as claims. For instance, the Examiner stated that the claims recite that conditional probabilities are determined for all test states by "examining dependencies of

25   conclusion links on the outcome nodes in the decision flowchart." The Examiner stated that the Applicant has not disclosed from where these probabilities actually come.

The Applicant directs the Examiner to paragraphs 59-65. The referenced paragraphs describe in detail where the probabilities actually come from. If after reading

the referenced paragraphs the Examiner needs further explanation, the Examiner is encouraged to contact the Applicant or the Applicant's representative.

Additionally, the Examiner stated that the Applicant has not disclosed any limitations to a practical application, so no one of ordinary skill in the art can look at a
5   network that has not been applied to anything and pull the probabilities out of thin air. The Examiner also stated that one cannot "examine" the dependencies of an abstract concept and know probabilities that are appropriate, further stating that "a limitation to a practical application must be disclosed."

The claims are to be interpreted in light of the specification. As described in the
10   specification, the present invention provides a practical application for use in decision-making systems. The practical application being the ability to determine the probability that a particular observation will occur (e.g., failure of a node/component) given the occurrence of a particular observation (e.g., failure of another component). The claims clearly describe the limitations of the present invention and therefore the Applicant
15   believes that the present invention is capable of being "examined."

As another basis for his rejection, the Examiner also stated that the Applicant did not specify the central conversion process that takes one from a decision flowchart to a causality graph. The Examiner hypothesized that the Applicant merely defined the decision flowchart in terms of the results of the conversion process, concluding that one
20   of ordinary skill in the art would not imply a specific conversion method from it.

The Examiner misinterpreted the Specification. The Applicant directs the Examiner to paragraph 60, lines 9-11, where it states, "the general steps for converting a flow chart into a graphical probabilistic model are illustrated next, using the flowchart from FIG. 4 as a non-limiting example." Paragraphs 61 through 65 of the Specification
25   continue by specifying the central conversion process that takes one from a decision

flowchart to a causality graph. As it is explicitly described in the Specification, one skilled in the art would clearly understand the specific conversion method.

The Examiner also stated that Claims 2, 24, and 46 disclose the use of a "Flowchart Markup Language (FCML)." The Examiner stated that no such language is

5   known to the art. The Examiner incorrectly concluded that there is no definition of the parameters of such a language in the Specification, stating that the so-called "FCML" is merely an abstract idea with no definition. Accordingly, the Examiner concluded that one of ordinary skill in the art would not know how to practice this part of the invention.

The applicant directs the Examiner to paragraph 51, lines 3-5, where it clearly

10   states, "the file may be converted to a portable file type 106 using an approach such as an extensible markup language (XML)-based language, termed a flow-chart markup language (FCML)." Contrary to the Examiner's assertion, XML is a commonly known term to one skilled in the art. The primary purpose of XML is to facilitate the sharing of data across different systems. As applied to the present invention, "After a flowchart is

15   created, it is exported to a computer file 102. The computer file 102 may be in a format native to the program from which it was created, a "portable" format, or any other computer representation. After the computer file 102 has been created, it is provided to a translator 104. After translation, the file may be converted to a portable file type 106 using an approach such as a ...XML-based language, termed ...FCML." See

20   Specification, paragraph 51. The term FCML was used because it is based on an XML language and is being applied specifically to encode information about a flowchart. Based on the definition in the Specification, one skilled in the art would clearly understand the use of the term FCML.

25   For the reasons set forth above, the Applicant respectfully submits that the present invention is sufficiently enabled to allow one skilled in the art to make or use the invention. Therefore, the Applicant respectfully requests that the Examiner withdraw this rejection of Claims 1-66.

Conclusion

The Applicant respectfully submits that in light of the above amendment/remarks, all claims are now in allowable condition. The Applicant thus respectfully requests timely allowance of all of the pending claims.

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In the event the Examiner wishes to discuss any aspect of this response, or believes that a conversation with either Applicant or Applicant's representative would be beneficial, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.
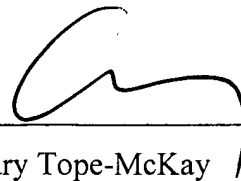
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The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to the attached credit card form. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an

15   extension of time of the number of months necessary to make this response timely filed. The petition fee due in connection therewith may be charged to deposit account no. 50-2738 if a credit card form has not been included with this correspondence, or if the credit card could not be charged.

20   Respectfully submitted,

Cary Tope-McKay

Registration No. 41,350

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Tel.: (310) 589-8158

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